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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,016	11/28/2001	Eric Cheng	5694.P079	2678

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EXAMINER

GRIER, LAURA A

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,016

Applicant(s)

CHENG, ERIC

Examiner

Laura A Grier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawing of figure 1 is objected to under 37 CFR 1.83(a) because it fails to show the reference numbers as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawing is required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. Regarding figure 3, step 310, the word, "real", should read as -- rear --. Appropriate correction is required.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, *an opening for receiving a front speaker signal* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The

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replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.
5. Claim 1, lines 4-5, recites "the front speaker signal". There is insufficient antecedent basis for this limitation in the claim.
6. Claim 1 is objected to because of the following informalities: line 9, "speaker" should be written as -- speakers --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
9. Claim 1 recites the limitation "the rear side bass" in lines 10-11. There is insufficient antecedent basis for this limitation in the claim.

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10. Regarding independent claim 1, line 2 and lines 3-4, respectively, recite “headphone-like or earphone-like device”. The cited claim language provides more than one interpretation: one interpretation renders the device being a headphone or earphone device, which is known as a device supporting speakers worn the about head of a user, and covering, worn over or inserted in the ear of a user; and the second interpretation renders the any type of device located in the vicinity of or about the head of the user comprising speakers, which may include speakers positioned near the head (ear) of the user, glasses that comprises speakers that are worn over the ear user, or just a simple communication device with speaker(s) worn in the ear of a user. Thus the claim language is indefinite.

For examination purposes, the term headphone or earphone-like, will be considered to be any type hearing device in the close proximity of the user’s ears and head or is utilized by the user’s ears and head.

11. Regarding independent claim 3, lines 2, 3, 4-5, 8, and 17, respectively, recite “headphone-like or earphone-like device”. The cited claim language provides more than one interpretation: one interpretation renders the device being a headphone or earphone device, which is known as a device supporting speakers worn the about head of a user, and covering, worn over or inserted in the ear of a user; and the second interpretation renders the any type of device located in the vicinity of or about the head of the user comprising speakers, which may include speakers positioned near the head (ear) of the user, glasses that comprises speakers that are worn over the ear user, or just a simple communication device with speaker(s) worn in the ear of a user. Thus the claim language is indefinite.

12. Regarding claim 1, line 6, recites "the signal under transmitting". It is unclear to the examiner which signal is being transmitted to the rear speakers. Several signals are claimed: the front signal, the rear signal and a sub-woofer signal. Thus the claim language is indefinite.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. **Claim 1, 3-6** are rejected under 35 U.S.C. 102(b) as being anticipated by Scofield et al., U. S. Patent No. 6144747.

Regarding **claim 1**, Scofield et al. (herein, Scofield) discloses a head mounted surround sound system. Scofield's head mounted system comprises left and right speakers (58/60) such that the speakers are fixed relative to the ear of the listener and slightly forward of the ears and adjacent the head, the speakers receives signals from front and rear speaker signals, which indicates the headphone or earphone with rear speakers and receiving a front signal, wherein an opening is inherently disclose as evident by the fact that front speaker signals are received by the head mounted speakers; since both front and rear speaker signals are receivable by the left and right speakers of the head mounting system, front and rear signals are transmitted to associated speakers, and further a subwoofer (296) is disclosed, which indicates transmitting a sub-woofer signal to an associated speaker (figures 15 and 17, abstract, col. 4, lines 19-33, col. 13, lines 12-48); processing and delaying the rear speaker signal by HRTF is inherently discloses as evident

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by the fact binaural processing/virtually positioning filtering (impulse filters) takes place, wherein the distance of the user to the front speaker is a common characteristic of defining head characteristics (col. 11, lines 30-46, col. 12, lines 1-33); wherein the transmitted processed rear signals with combined the effects of the subwoofer, virtual rear speakers are created without losing bass.

15. Regarding **claim 2**, Scofield discloses a head mounted surround sound system. Scofield's head mounted system comprises left and right speakers (58/60) such that the speakers are fixed relative to the ear of the listener and slightly forward of the ears and adjacent the head, the speakers receives signals from front and rear speaker signals, wherein the system may be implement via through glasses (70 – col. 8, lines 17-37) which indicates the headphone or earphone for a user to carry on his/her head, and does not cover the user's whole ear, since both front and rear speaker signals are receivable by the left and right speakers of the head mounting system, front speaker signals are received and rear signals are located on both sides of the earphone or headphone device, and further a subwoofer (296) is disclosed, which indicates a subwoofer signal is received by the head mounted system (figures 15 and 17, abstract, col. 4, lines 19-33, col. 13, lines 12-48); binaural processing or processors/virtually positioning filters (impulse filters) inherently indicate HRTF generating means of the rear and left signal (col. 11, lines 30-46, col. 12, lines 1-33) and means for creating a virtual speaker, wherein the transmitted processed rear signals with combined the effects of the subwoofer, virtual rear speakers are created.

16. Regarding **claim 4**, Schofield discloses everything claimed as applied above (see claim 3). Schofield's disclosure of binaural processing or processors/virtually positioning filters

(inherently indicate HRTF generating means, in which delaying a signal and filtering are techniques for generating HRTF or determining head acoustics (col. 11, lines 30-46, col. 12, lines 1-33).

17. Regarding **claim 5**, Schofield discloses everything claimed as applied above (see claim 3). Schofield further discloses an infrared transmitter (figure 17 –reference 286), which indicates a wireless signal emitter, therein.

18. Regarding **claim 6**, Schofield discloses everything claimed as applied above (see claim 3). Schofield further discloses an infrared transmitter (figure 17 –reference 286), which transmits to the glasses (col. 13, lines 36-38), inherently indicates a wireless signal receiver, therein.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. **Claim 2 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield.

Regarding **claims 2 and 7**, respectively, Scofield discloses everything claimed as applied above. However, Scofield fails to disclose the time delay determined as a distance between the user and the front speakers divided by the velocity of the sound in air (herein, delay time). Velocity is a measurement of distance verses time (in simple terms, in reference to speed of sound). Thus, it would have been obvious to one of the ordinary skill in the art at the time the

invention was made modify the invention of Scofield by implement delay time for the purpose of determining the time interval in which the signal is delayed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks


Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


Laura A. Grier
June 26, 2004